U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

ENERGY EFFICENCY IN THE HOME BUYING PROCESS

October 16th 2014

ASK ABOUT ENERGY STAR

Colorado Energy Office

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Today's Presenters

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Brothers Redevelopment / Colorado Housing Connects

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Colorado Energy Office

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Environmental Protection Agency

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Department of Housing and Urban Development

Introduction

The presentation will be broken up into two parts:

The first part will review basic energy efficiency measures and current market changes within energy efficiency and renewable energy

The second part will cover the FHA Energy Efficient Mortgage program and the Colorado Energy Office (CEO) Mortgage Incentive.

What we hope you take away:

A basic understanding of energy efficiency

How to incorporate the FHA EEM product and the CEO mortgage incentive within your business.

Residential Energy Efficiency

Q: Why a big deal?

A: Money Savings!

New Homes Programs Utility Bill Savings:

- ENERGY STAR: $400/year

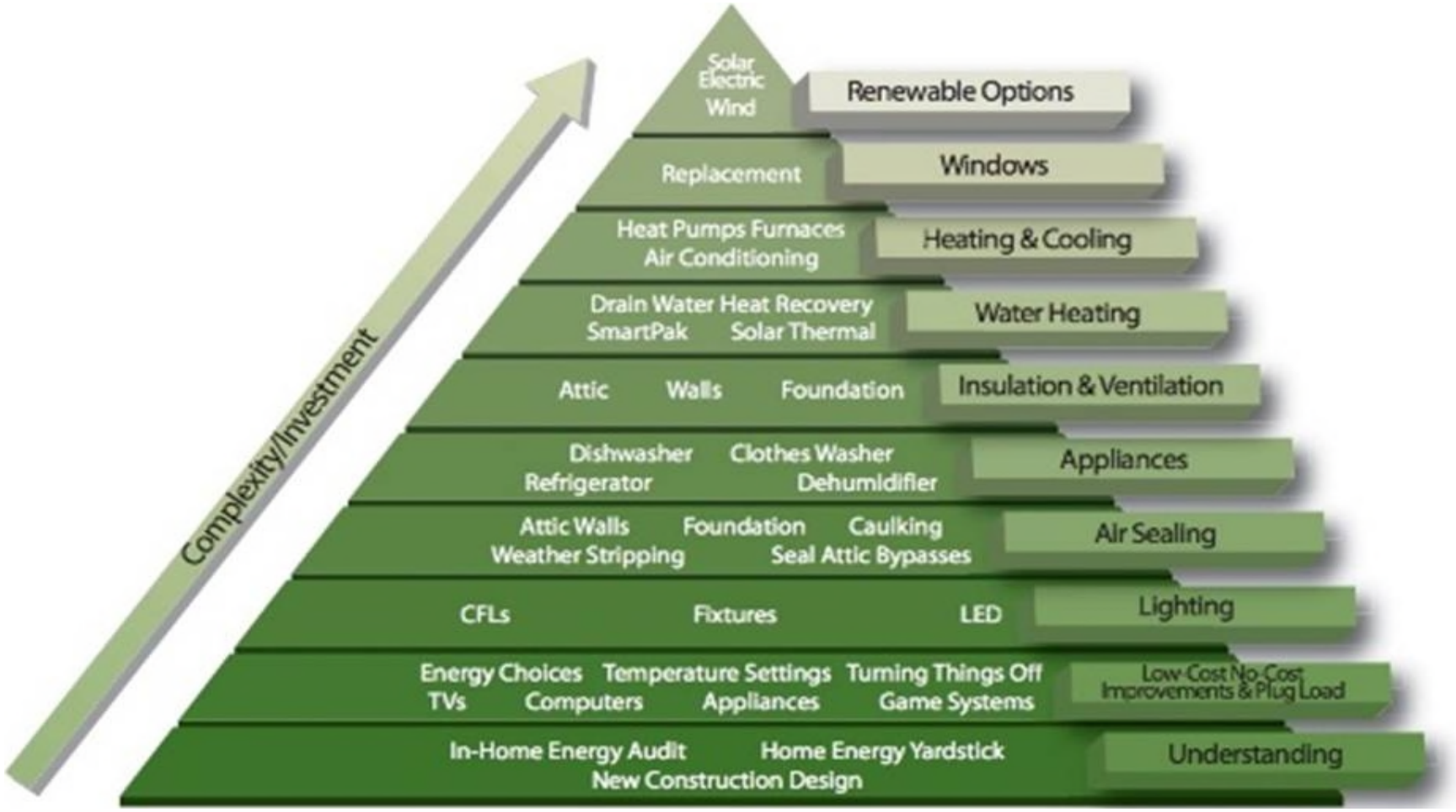
Labeled Products:

- Heating & Cooling: 46% of utility bill ~ cut bill by $200
- CFLs: Change 5 ~ Save $70/year!
- Water Heater: $80/year!

Residential Energy Efficiency

- Properly Sealing and Insulating: save 20% on heating and cooling costs per year!
- Adding insulation ~ 12-15 inches (R-38) recommended for most homes.
- Sealing ducts ~ about 20% of conditioned air (air you paid to heat or cool) is lost through duct leakage.

It’s not always about new windows!



Energy Improvements

Heating Energy Loss

Xcel Energy®

Where is energy being lost in your home?

We have calculated your home's actual performance through a method known as Air Conditioning Contractors of America (ACCA) Manual J. This process allows us to precisely understand how each component of your building affects your heating load, and identify which areas are most appropriate to improve based on your health, comfort and efficiency goals.

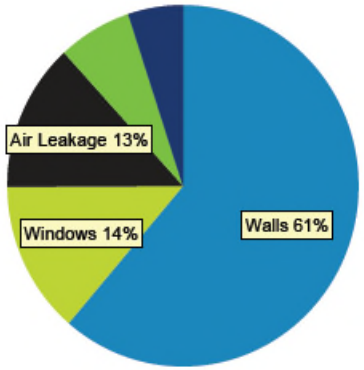
Energy Loss in Your Home

Energy loss, in BTUh* by building component, on the coldest night of the year

Walls	27,835
Windows	6,196
Air Leakage	6,020
Attic	3,083
Floors	2,288
Total	45,422

*British Thermal Unit, a unit of energy. BTUh is used to quantify the heat loss or heat gain through the building envelope, as well as the power needed for domestic hot water

Energy loss by building component, on the coldest night of the year in your area



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Energy Improvements

Air Leakage

Xcel Energy®

How drafty is your home?

Reducing air leakage is often the single most effective step you can take towards a more efficient, healthy and comfortable home. Minimizing air leakage can reduce heating and cooling bills, and improve indoor air quality and comfort. During your energy audit I used a blower door to determine the percentage of air your home exchanges with the outdoors per hour.

Air Changes Per Hour

Envelope leakage at CFM50*	1,535
Natural ACH** (Air Change Per Hour)	0.39
ASHRAE*** Recommended Level	0.35

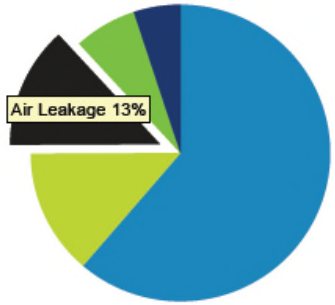
Equivalent to a 9 x 9 in^2 hole in your home

*Cubic Feet per Minute. Used to quantify the air flow through duct work, air infiltration, or ventilation.

**Air Changes per Hour. The number of times the home's air is replaced from outside in an hour.

***American Society of Heating, Refrigerating, and Air Conditioning Engineers.

Energy lost by air leakage, on the coldest night of the year in your area



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Energy Improvements

Photos of Your Baseboard

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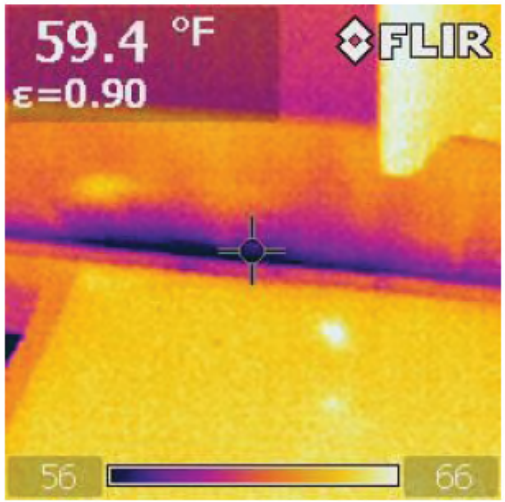
Your baseboard leaks air. This picture is representative of several places in your home. An easy way to remedy this is with clear caulk, so it won't show up on your floor. I recommend sealing the tops of all the quarter-round trim pieces in your home.



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Energy Improvements

Attic Insulation

Xcel Energy®

How well is your attic insulated?

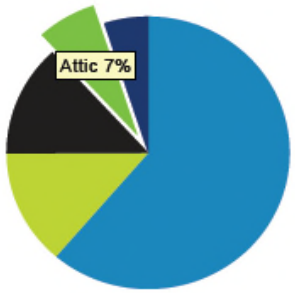
After air sealing, attic insulation is typically one of the best "bang for your buck" steps you can take towards a more efficient and comfortable home. Well installed attic insulation acts as a barrier to summer and winter heat loss to and from your attic. It's like a nice thick, winter hat for your home that saves you money all year round. Due to thin spots, voids, and less-than-perfect installation, your insulation is not performing at its rated capacity, and not protecting you as well as it could. The gaps between batts are concentrating heat loss in those places. Blowing insulation over the top can help increase comfort and reduce bills.

Insulation Type & R-Value

Insulation type	Fiberglass, batts R-30 Fair installation quality
System R-Value	R-19

Recommended R-Value: R-48

Energy lost by attic, on the coldest night of the year in your area



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Energy Improvements

Photos of Your Attic Hatch

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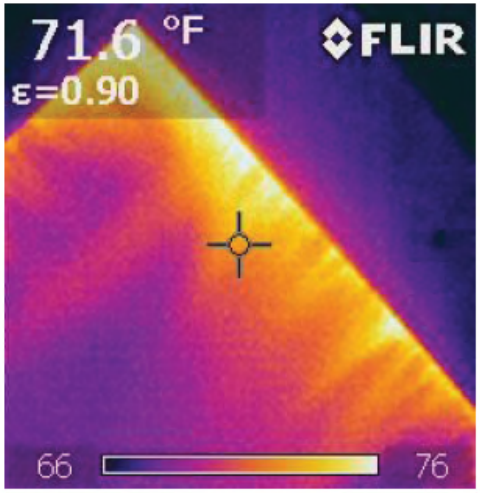
I recommend sealing the trim with caulking, and the hatch with weatherstripping, adding weight to the hatch board, and firmly attaching insulation to the new board.



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Energy Improvements

Wall Insulation

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How well are your walls insulated?

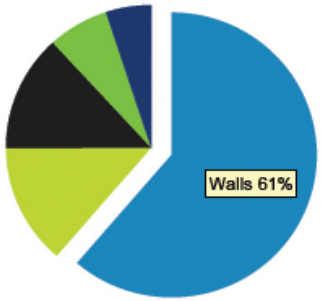
Walls typically account for a large percentage of total heat loss due to the amount of wall surface area to the outdoors. When possible, adding wall insulation to an existing home can greatly improve comfort and efficiency as well as decrease outdoor noise. However, it may be easier to have an impact on your comfort by treating the attic and crawlspace first. Despite their large portion of the heating load in your home, I do not recommend any changes to your walls at this time.

Insulation Type & R-Value

System R-Value R-3

Recommended R-Value: R-15 (2x4) and R-21 (2x6)

Energy lost by walls, on the coldest night of the year in your area



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Energy Improvements

Windows

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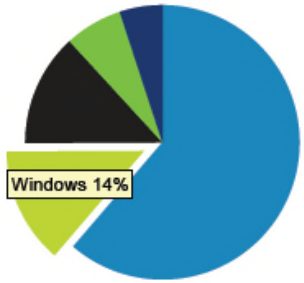
How efficient are your windows?

Windows are an important component of a well performing building envelope. It's important, however, to consider the energy savings potential of window replacement compared to other building envelope improvements. Steps like building envelope sealing and adding insulation are typically more cost effective and will have a greater impact on improving comfort and health. The storm windows are effective at slowing heat loss. Except for the caulking we discussed, I do not recommend any changes to your windows at this time.

Window Information

Qty	Panes	Window	Frame Type
17	Single, Clear Glass	Window with storm	Wood (including Metal Clad) or Vinyl

Energy lost by windows, on the coldest night of the year in your area



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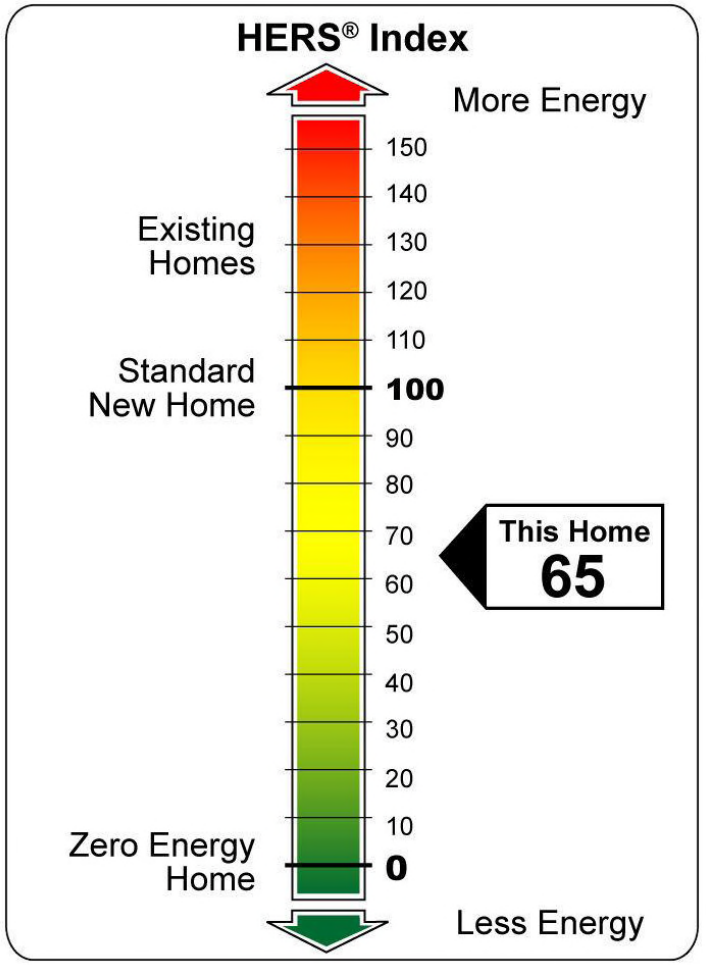
What is a HERS Index Rating

- The HERS Index provides a score, so one can compare the energy use of homes.
- The 2004 International Energy Conservation Code set the HERS Reference Home at 100.
- Each 1-point decrease in the HERS Index equals a 1% reduction in energy consumption compared to the HERS Reference Home.
- Serves as the energy rating system for ESNH and LEED Homes.
- Approved by mortgage industry.



Source: RESNET

Resources

How much energy does my home use?

ENERGY STAR Home Energy Yardstick *free*:

https://www.energystar.gov/index.cfm?fuseaction=HOME_ENERGY_YARDSTICK.showGetStarted

Department of Energy Home Energy Saver *free*:

http://homeenergysaver.lbl.gov/consumer/

Where can I find rebates?

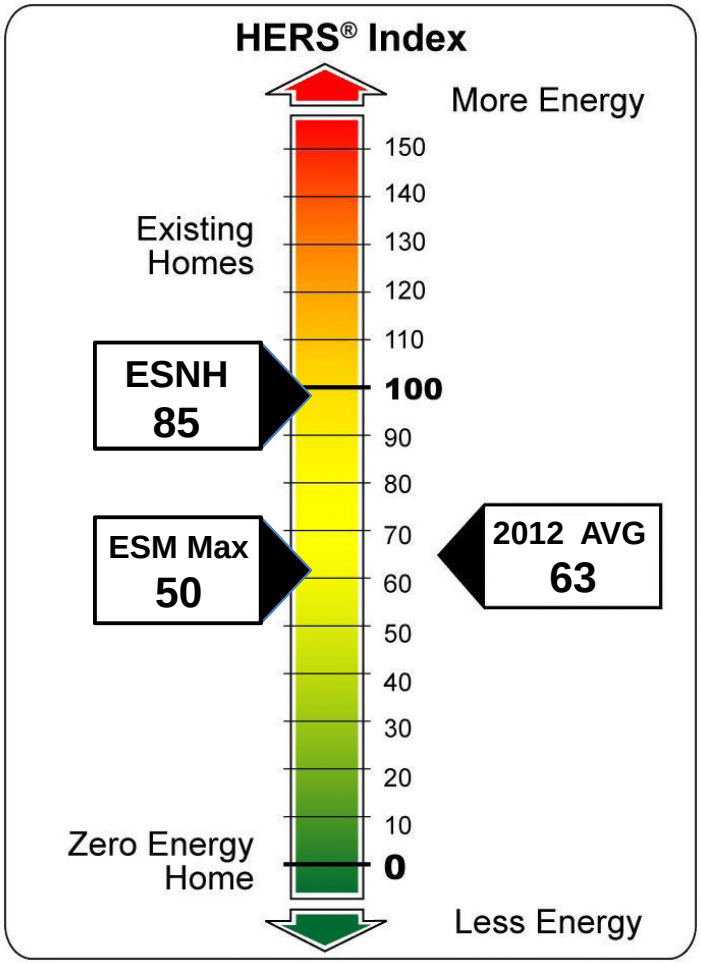
Xcel Energy:

http://www.xcelenergy.com/xe-en/Save_Money_&_Energy/Find_a_Rebate

New Homes Increasingly Efficient

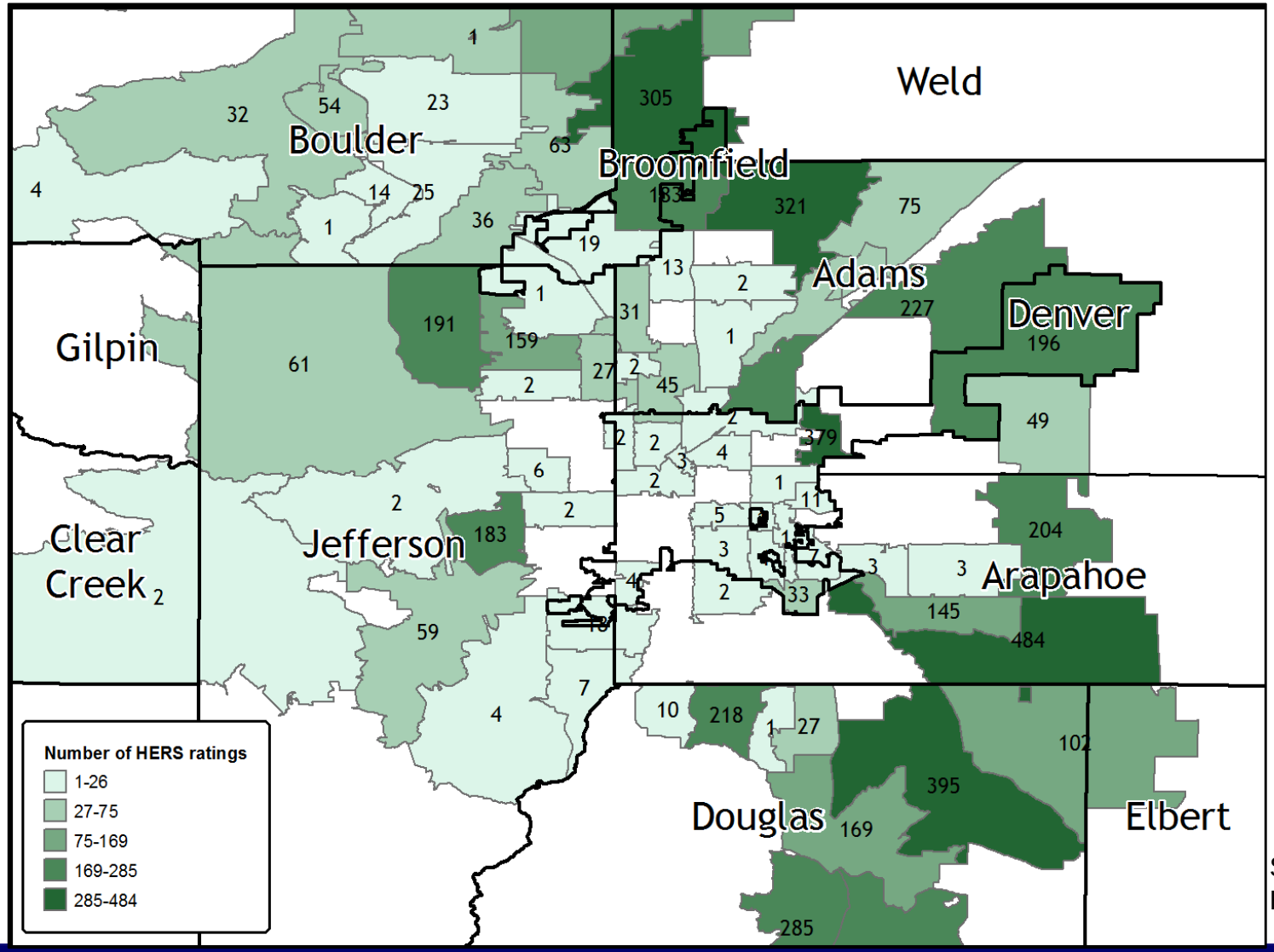
Statewide Data Overview

- In both 2010 and 2011 45% of all new homes are rated in Colorado and built to ENERGY STAR New Homes Guidelines (ESNH) with a maximum HERS Index Rating of 85.
- The last quarter of 2013, the average HERS Index Scale Rating for Single Family Homes drops to 59.
- In 2013 the Energy Saving Mortgage Incentive is revised with a maximum HERS Index Rating of 50.



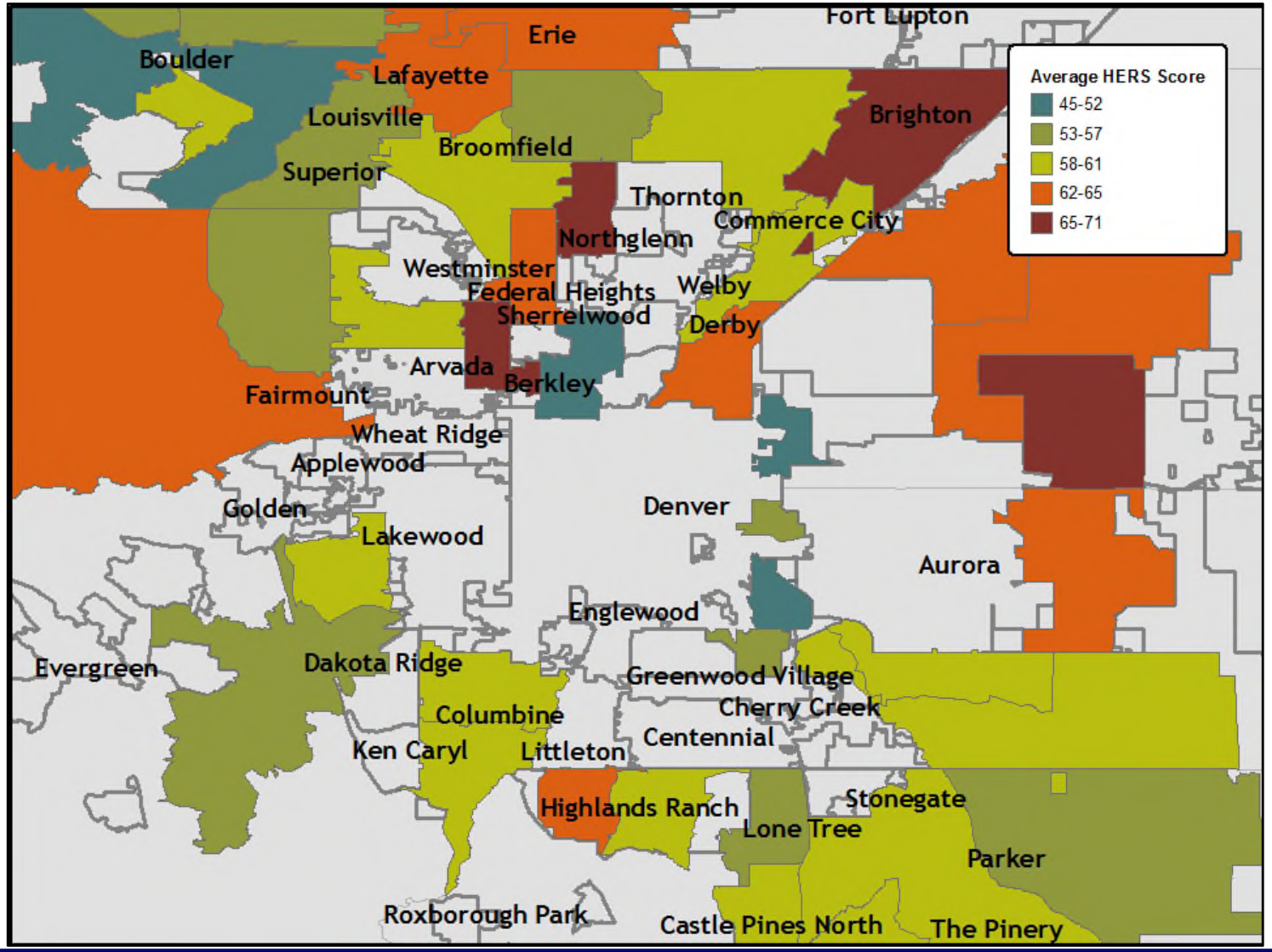
Source: RESNET

Number of HERS Index Ratings in 2013



Single Family Homes

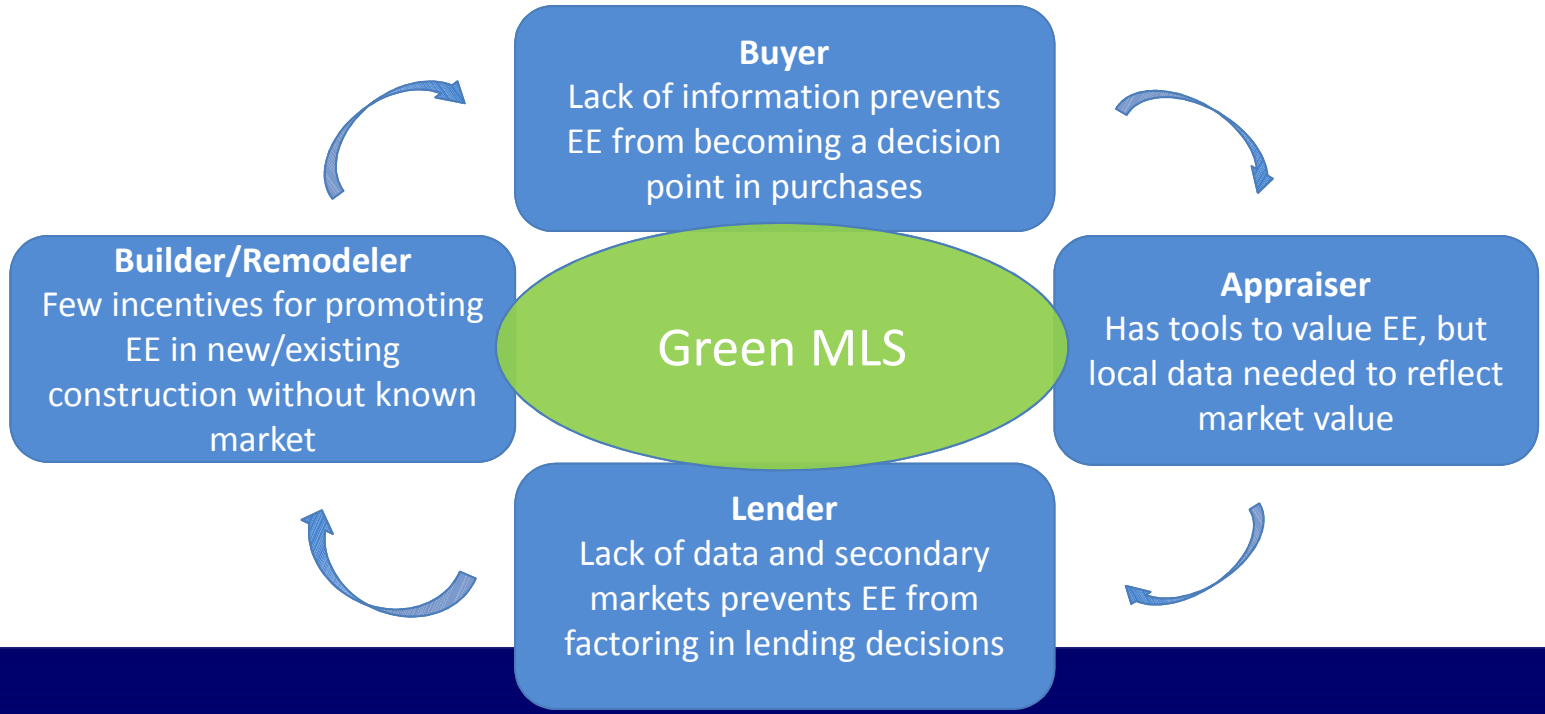
Average HERS Index Ratings in 2013



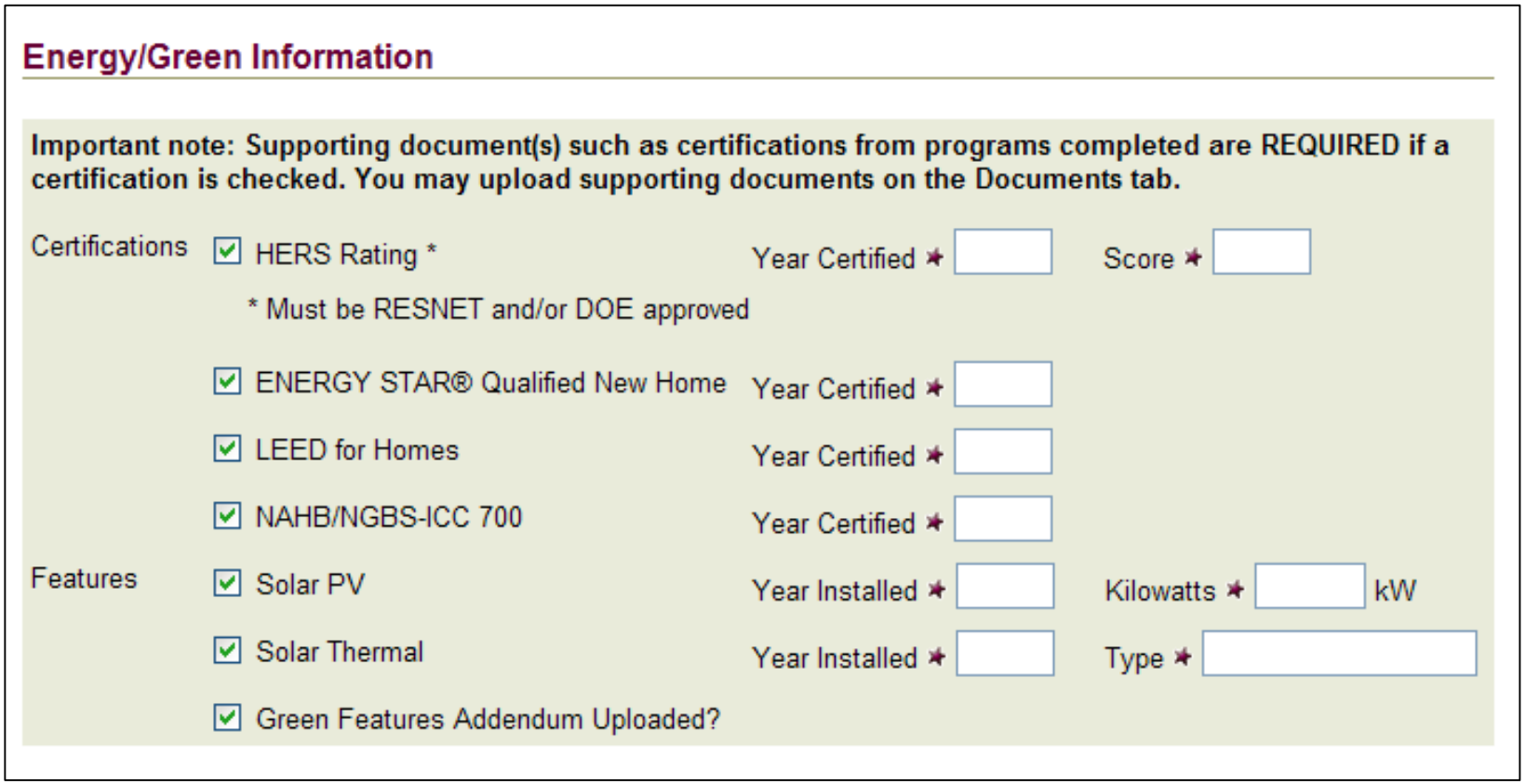
Single Family Homes

Green MLS Initiative

- The Green Multiple Listing Service (MLS) Initiative aims to increase the energy efficiency and the use of renewable energy at the time of sale.
- The effort can be broken into three overlapping phases: Implementing the fields, Increasing Use / Retrofits, and Maintaining the Market.
- Developing searchable fields are the first step to unlock the potential value of energy efficiency (EE) in the home buying process.



MLS Data Input



Energy/Green Information

Important note: Supporting document(s) such as certifications from programs completed are REQUIRED if a certification is checked. You may upload supporting documents on the Documents tab.

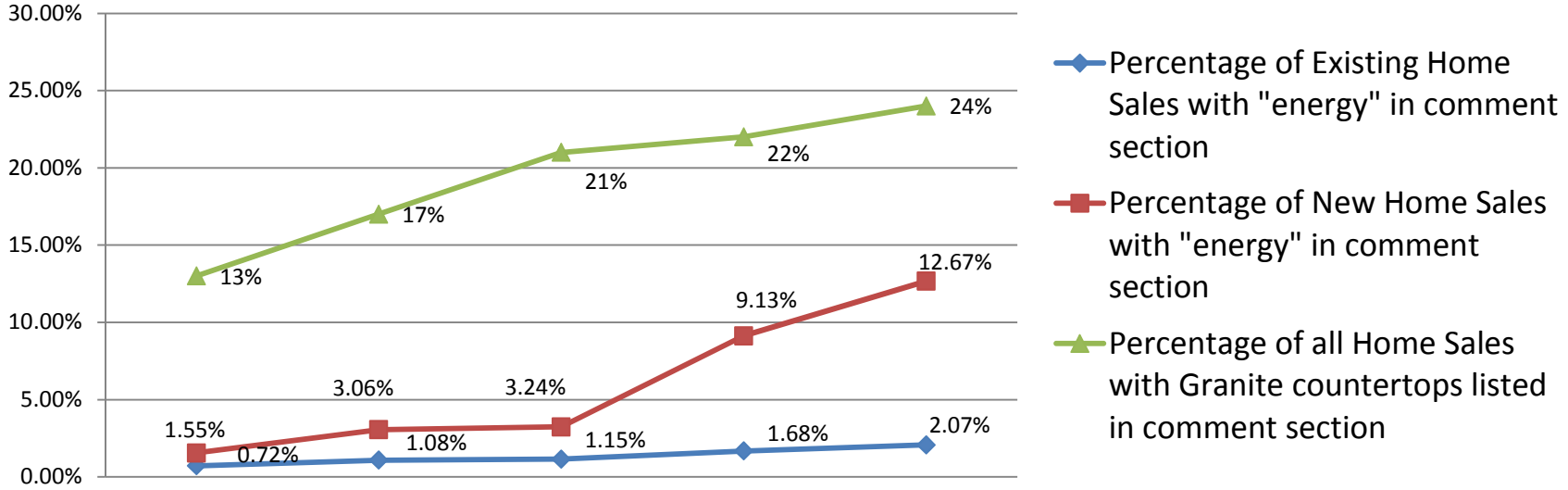
Certifications
- ☑ HERS Rating * — Year Certified * ____ Score * ____
  * Must be RESNET and/or DOE approved
- ☑ ENERGY STAR® Qualified New Home — Year Certified * ____
- ☑ LEED for Homes — Year Certified * ____
- ☑ NAHB/NGBS-ICC 700 — Year Certified * ____

Features
- ☑ Solar PV — Year Installed * ____ Kilowatts * ____ kW
- ☑ Solar Thermal — Year Installed * ____ Type * ____
- ☑ Green Features Addendum Uploaded?

Source: IRES

Impact of Real Estate Trainings

Tracking words real estate agents enter into the comments section of Metrolist and IRES MLS systems to track market trend. Two thirds of all homes in the state are sold through these two systems.



Key Take Always:

- The increase of granite counter tops in the market. Home buyers expect that level of finish
- The increase in the word “energy” in new homes since 2010
- The trickle down effect of the word “energy” in the existing homes market

Colorado Energy Office PV Solar Study

- The CEO worked with the Appraisal Institute- CO Chapter and the Colorado Coalition of Appraisers to develop the PV Solar Study
- The appraiser selected 30 sold homes in the Northwest Denver Metro area ranging in value from $200,000-$680,000 that sold from 2011- 2013.
- All systems studied were owned not leased systems
- The Study has been peer reviewed and was published in Oct. of 2013
  - Of the 30 homes, 21 sold for higher because of the PV system and none sold for less
  - The range of value for the systems $1.45 per watt to $2.57 per watt
  - The Study also includes a detailed look at how appraisers can investigate PV Solar systems when developing their opinion of value.

Energy Efficient Mortgage Program

www.hud.gov

Introduction

In 1992, Congress mandated a pilot demonstration of Energy Efficient Mortgages (EEMs) in five states. In 1995, the pilot was expanded as a national program.

What is an EEM?

- The EEM program recognizes improved energy efficiency of a home increases its affordability by reducing operating costs.
- Allows borrowers to upgrade the energy efficiency of their home and finance the cost of the energy package into their loan.
- Payments are spread out over the life of the mortgage

Eligibility

Eligible

- Most FHA single family programs
- Purchases and refinances, including streamline refinances
- New and existing homes
- 1-4 units including condos and manufactured homes

Ineligible

- HECMs
- Cooperative Share Loans
- Cash out refinances

EEM & 1st Time Homebuyers

- 1st Time Homebuyers are very budget conscious...or should be
- Monthly expenses such as Utilities can often present sticker shock -
  - adding insulation, sealing ducts, etc. can minimize the monthly
  - depletion of funds. *Increasing monthly cash flow*
- Home maintenance can include expensive repairs for items like water heaters and
  - furnaces and for the consumer this mean a decision between hot water
  - and making the mortgage payment. Starting with new more energy efficient appliances can ease the monthly bills and prevent the buyer from having to make choices he/she can't recover from.

While the cost of improvements is added to the mortgage the difference in the P & I versus the energy savings over time still results in a net savings

Borrowers are qualified on the mortgage without the Energy Efficient Mortgage

EEM and the Housing Counselor

- We need YOU to educate your homebuyers, planting the seed so they can ask their realtor or lender...if they have the basic information they can ask the right questions...
- Ask the *Inspector* – how is my insulation? How old is my water heater?
- Ask the *Realtor* – based on age of home, how energy efficient is it?
- Ask the *Lender* – do you offer Energy Efficient Mortgages? If not – WHY?
- Should I get a HERS Report? If not – WHY?
- Our job in the community is to educate homebuyers and give them the resources to be successful, we want them to benefit from homeownership, we are trying to prevent foreclosure...

Key Components of the EEM

- HERS Report
- Energy Package
  - Cost-Effective Improvements
- Maximum amount that can be financed for energy improvements

HERS Report

- Home Energy Rating Systems (HERS) Report.
- Based on a home energy audit conducted by a qualified rater.
  - Trained to evaluate a home using the HERS tool.
  - Evaluated the home for energy efficiency
  - Recommends effective improvements
  - Estimates energy savings from each improvement
- Must not be older than 120 days

Components of the EEM Calculation

Freddie Mac Loan Limit and Median Area Price *(HOME VALUE = 200,000.00)*

Freddie Mac **Loan Limits**

For 2012, we are maintaining the base conforming loan limits at the 2011 levels. Through December 31, 2012, Freddie Mac will continue to purchase home mortgages up to the following loan amounts:

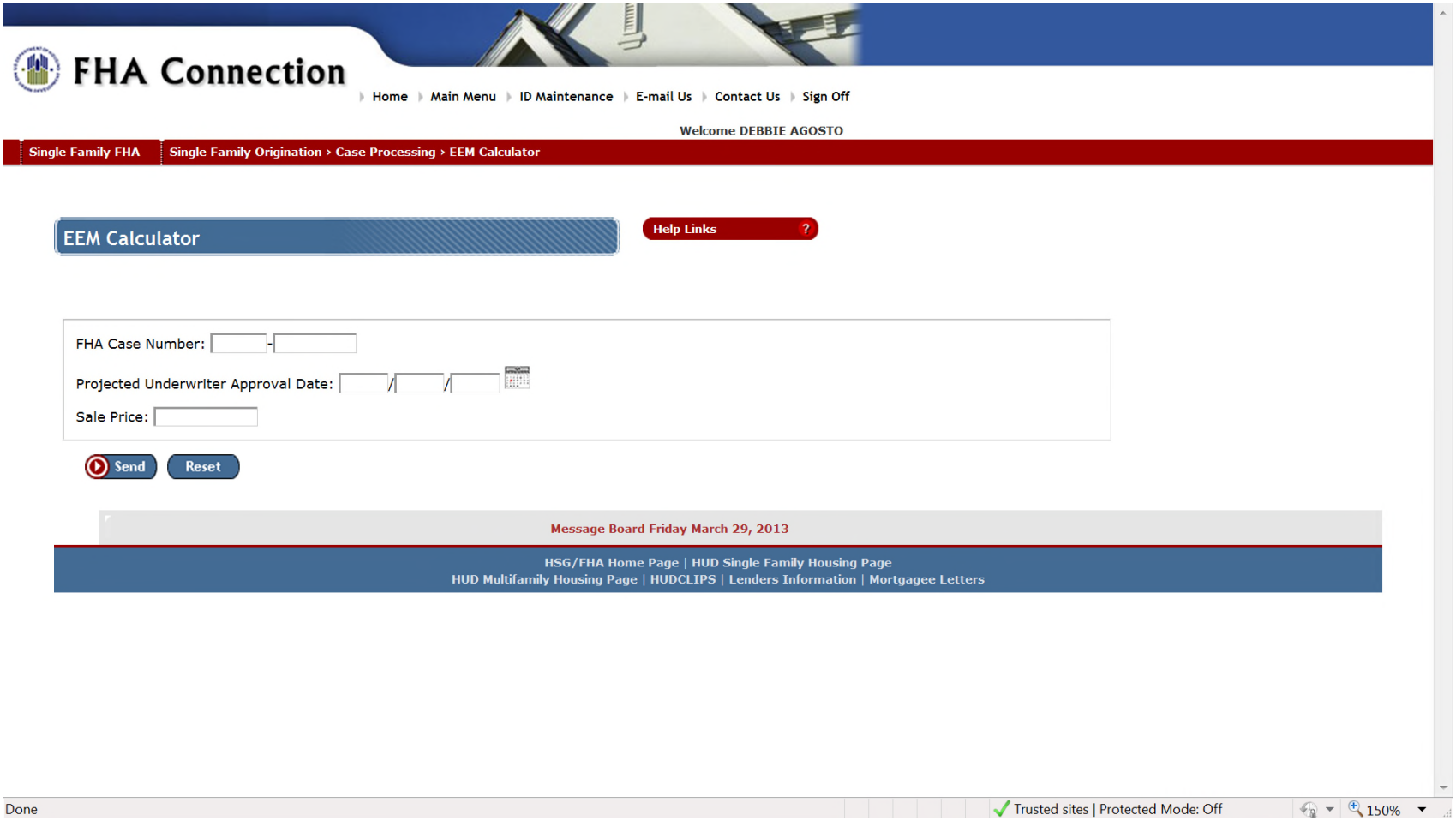
Property Type	Maximum Base Conforming Loan Limits for properties NOT located in Alaska, Hawaii, Guam & U.S. Virgin Islands	Maximum Base Conforming Loan Limits for properties located in Alaska, Hawaii, Guam & U.S. Virgin Islands
1-unit	$417,000	$625,500
2-unit	$533,850	$800,775
3-unit	$645,300	$967,950
4-unit	$801,950	$1,202,925

State	MSA Name	County Name	MSA Code	County Code	Median Price
CO	DENVER-AURORA-LAKEWOOD, CO	Denver/Arap/Jeffco/Douglas	31		340,000

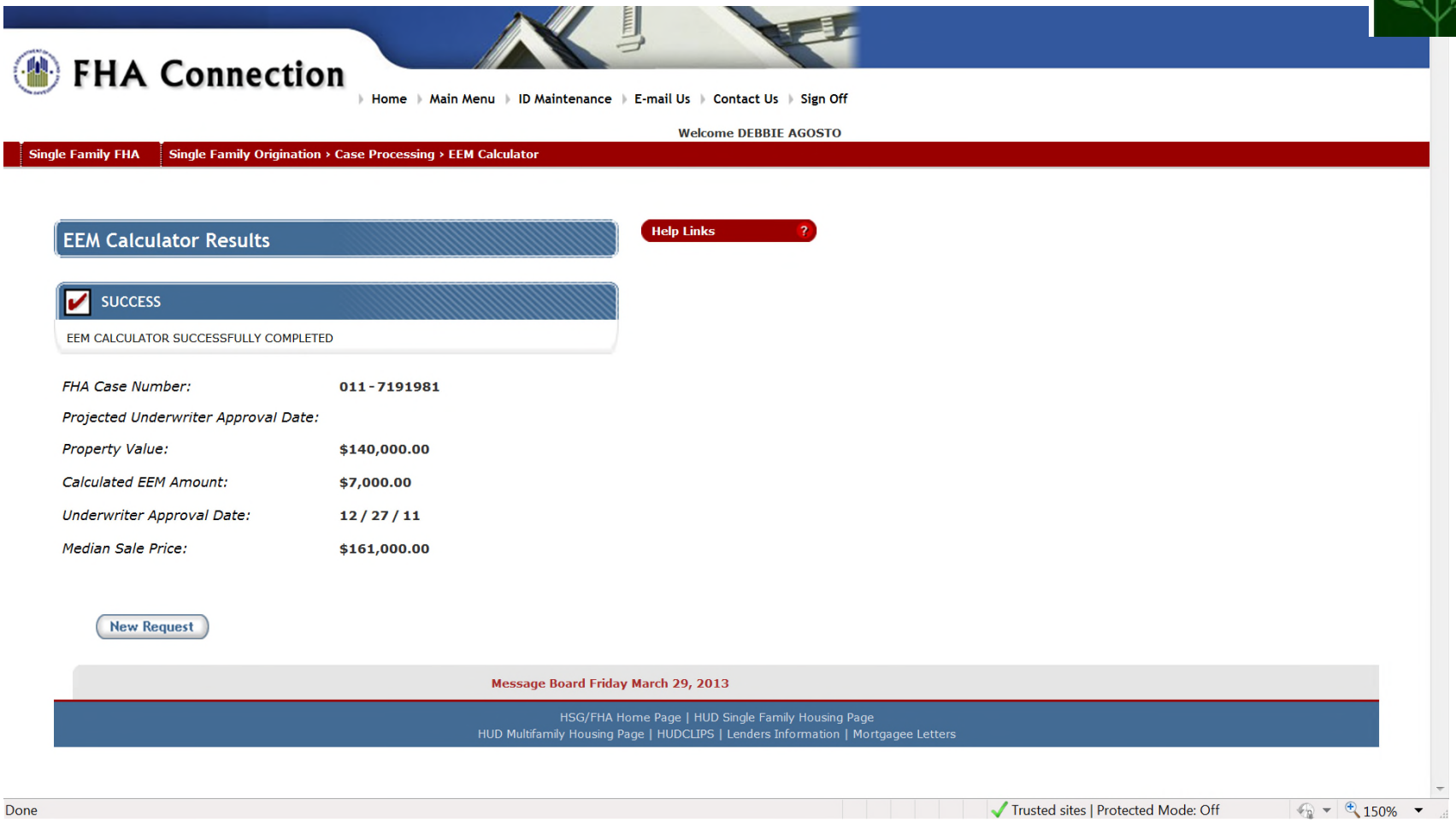
EEM Max Mtg Calculation

- So, the max EEM loan amount = the lessor of:
- The Value x 5%,
  SP = 200000.00 x 5% = $10,000.00
- 115% of the Median area price for Denver County x 5%
  115 % of Median 340000 x 5% = $19,550.00
- 150% of Freddie's Conforming limit x 5%
  150% of $417000 x 5% = $31,275.00
- Knowing your county helps you have an idea what the homebuyers limits are...

EEM Calculator Screen Shot



EEM Calculator Results



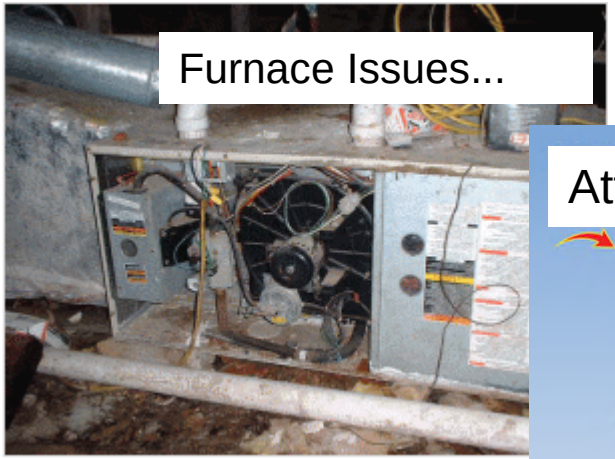
Real Life example...

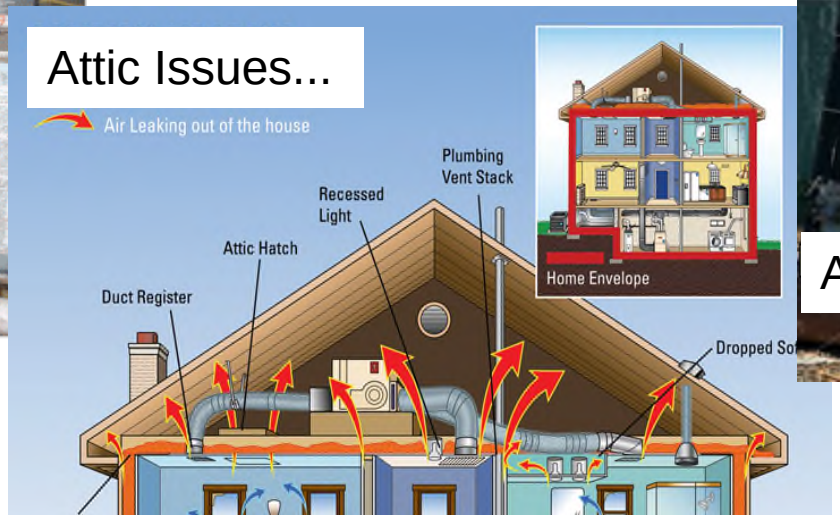
John and Judy 1st time Homebuyer

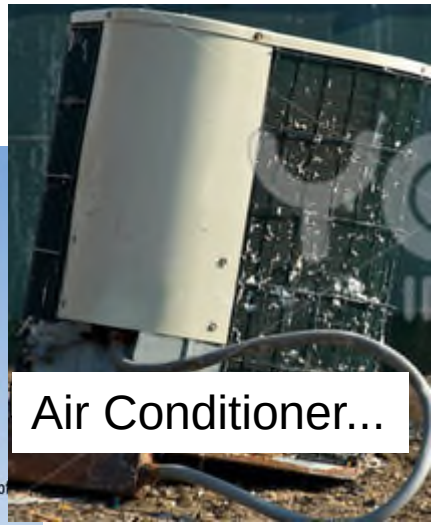
- Found a home for $135000.00
- 1522 sq. ft. with a 988 sq. ft. basement 50% fin
- 3 bdrm 1.1 bath built in 1941 with an eff age of 20yrs

The HERS Results...

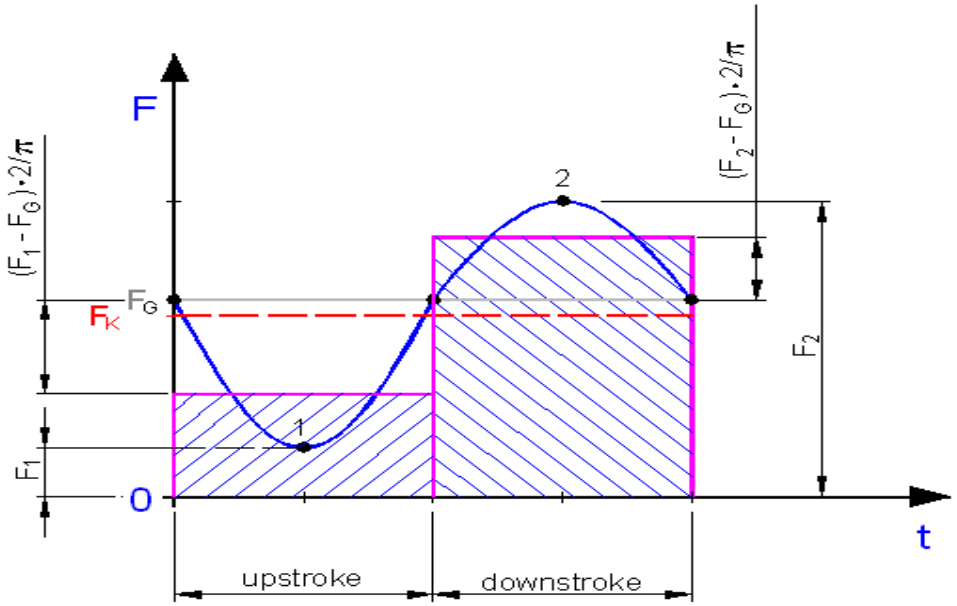
HERS report indicated they needed a new furnace (the old one was operating at 60% eff), new AC (replace 8 seer eff with 14 seer eff), seal dampers in fireplaces, add'l insulation in attic and air sealing accesses, foam spray insulation for Rim and Band joist not currently insulated.







EEM CALCULATION



With a sinusoidal sequence the average value of a force during powered flight (e.g. lift) results solely from the values of gliding flight and the values in the middle of up- and downstroke.

Average value of a sinus half-wave = peak value $\cdot 2/\pi$

$$F_K = F_G + \frac{(F_1 - F_G) \cdot \frac{2}{\pi}}{2} + \frac{(F_2 - F_G) \cdot \frac{2}{\pi}}{2}$$

SAVINGS CALCULATION

Traditional Calculation

$13,5000.00	
X 96.5%	Max LTV
$130275.00	Loan Amount
$584.99	p&i (3.5% fixed rate)

Energy Efficient Mortgage Calculation

$130,275.00	Base Loan Amount
$6690.35 + $503.00	*Cost of Improvements + inspection costs*
($7,193.35)	*Recommended by HERS report*
$6,750.00	Allowable cost (Max Loan Calc 5/15/50)
$137,025.00	EEM Loan Amount
$615.30	p&i (3.5% fixed rate)
	...a NET Savings of 81.35/mo.

ENERGY SAVINGS

- Per the HERS report, when the improvements are made, the borrowers will save **$111.66/mo.**

(the p&i difference $30.31 =$81.35 NET)

- AND they will have made a capital investment in their home!
- AND they can cash in on Federal and State tax credits and/or Energy rebates!

BENEFITS

- Contractors and Bids **DO NOT** have to be in place prior to closing
- **No** Additional Appraisal
  - Only a Final Inspection when work completed to release escrow – COMMON PRACTICE
- There is nothing to slow your transaction down… **HERS Reports should be ordered early –and often!**

FAQS

Energy Efficient Mortgage (EEM) Program

WHAT IS AN EEM?

- The EEM is an FHA-insured mortgage loan that enables a borrower to purchase or refinance a principal residence at an affordable interest rate and incorporate the cost of energy efficient improvements into the mortgage amount. The result is one convenient mortgage loan—no construction loan, no second mortgage.

EEM REQUIREMENTS

- Purchases, streamline refinances and no cash out refinances only (no cash out allowed).
- Existing or new construction. Can be used with other FHA programs (see reverse side.).
- New and existing 1-4 unit properties including FHA approved condominiums and manufactured homes.
- Home must be owner-occupied.
- FHA standard underwriting guidelines apply including FHA's 3.5% down payment for maximum (96.5%) financing.
- Unlike other FHA loans, the FHA loan limit for the area may be exceeded by the cost of the EEM improvements.
- An approved FHA EEM lender will process and close the loan.
- Just like any other loan type, applicants must have acceptable credit and sufficient and documentable income.

ABOUT THE EEM LOAN & IMPROVEMENTS

- The EEM improvements agreed to by the borrower are rated by a HERS (Home Energy Rating System) report. The cost of this report, as well as inspections, can be included in the loan amount.
- EEM improvements must be "cost effective" meaning their cost is less than the total present value of the energy saved over the useful life of the improvements.
- The dollar amount of the EEM improvements, plus the cost of reports and inspections, is the lesser of 5% of:
  - the value of the property, or
  - 115% of the median area price of a single family dwelling, or
  - 150% of the conforming Freddie Mac limit.

HOW DOES THE EEM WORK?

- During the processing of the loan, the FHA lender will order a HERS report from an acceptable provider such as a utility company, non-profit organization or local, state or federal agency.
- The applicant must qualify for the base mortgage before the EEM improvements are added on; for new construction, the applicant will qualify on the sales price less the cost of the EEM improvements.
- If the energy saved more than pays for the cost of the EEM improvements then the borrower does not have to qualify for the cost of the EEM improvements.
- EEM improvements on existing homes are made or installed after closing. The funds for the EEM improvements are held in an escrow account and paid to contractors according to a predetermined inspection and payment schedule.

FAQS, continued

Energy Efficient Mortgage (EEM) Program

OTHER FHA PROGRAMS

- The EEM can also be used with the **FHA 203(k) or Streamlined (k) Programs**, two loan programs that enable a borrower to include the cost of major or minor home repairs into the FHA mortgage amount. Typically, if able, a borrower will finance the cost of non-energy efficient home repairs with a 203(k) loan then finance the energy efficient home improvements with the EEM.
  For more information go to: www.hud.gov and type '203(k)' in the search box.
- The EEM can be used with the **FHA 203(h) Program,** a no-down payment FHA loan *only* for victims of a presidentially declared disaster. This program is limited to 1-unit owner occupied homes; the borrower may purchase a home anywhere in the country, not just in the disaster affected area.
  For more information go to: www.hud.gov and type '203(h)' in the search box.
- For energy efficient housing rehabilitation activities that do not require buying or refinancing a property, borrowers may consider HUD's second mortgage **Title I Home Improvement Loan Program.**
  For more information go to: www.hud.gov and type 'Title I Home Improvements' in the search box.

Your Door to FHA HOMEOWNERSHIP

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Federal Housing Administration
Denver Homeownership Center Rev 8-2011

FOR MORE INFORMATION

Industry Partners:

- Refer to these Mortgagee Letters:
  ML 2009-18
  ML 2005-21
  ML 1995-46
  ML1993-13
- Read **HUD Handbook 4155.1 6.D.1**

Consumers:

- Visit these websites:
  www.hud.gov/fha
  www.hud.gov/answers
  www.espanol.hud.gov
  www.energystar.gov
  www.energysavers.gov
  www.eere.energy.gov
- Call:
  1-800-Call FHA

To determine if an FHA EEM loan or any other loan is right for you, seek advise from a HUD-Approved Housing Counseling Agency. HUD promotes over 2400 agencies throughout the country and their services are usually free of charge. To locate a HUD-approved housing counseling agency near you, call the HUD Counselor Locator at:

1-800-569-4287

RESOURCE TOOLS

- FHA Connection – EEM Calculator

  Case Processing Screen
- EEM Home Page: http://portal.hud.gov/hudportal/HUD?src=/program_offices/housing/sfh/eem
- Median Area Prices (from EEM homepage)
- National Conforming Loan Limits http://www.freddiemac.com/singlefamily/news/2013/1126_loan_limits.html
- www.resnet.us

WHAT IF?

Question: What if the desired EE improvements from the HERS report cost more than the maximum allowed by the EEM Calculator tool?

Answer: The excess costs may not be financed, but borrowers may pay the excess cost from their own (borrower)funds OR they may qualify for the Colorado Energy Saving Mortgage Incentive...

Colorado Energy Saving Mortgage Incentive

Who and What:

- The Colorado Energy Office (CEO) can partner with any bank in Colorado to offer a tiered incentive based on the HERS Index Scale.
- Works with any mortgage product including the EEM products
- Max credit for new net-zero home is $8,000 and $6,000 for an existing home.

To Qualify:

- A new home must have a HERS Index rating below 50
- Existing homes must have a HERS Rating and prioritize air sealing, insulation, and heating equipment before moving onto other items.
- Working with local utilities to develop easier pathway for existing homes

Colorado Energy Saving Mortgage Incentive

Existing Home Tiers:

HERS Index Rating Drop of 10-20*	: $2,000 benefit**
HERS Index Rating Drop of 21-35	: $3,000 benefit
HERS Index Rating Drop of 36-50	: $4,000 benefit
HERS Index Rating Drop of 51-65	: $5,000 benefit
HERS Index Rating Drop greater than 66	: $6,000 benefit

* Maximum HERS Index Start point is 150

** Tiers do not include the matching portion of .5% of mortgage balance

New Home Mortgage Incentive Tiers:

HERS Index Rating 50-40	: $2,000 benefit (Non-State contribution $500)
HERS Index Rating 39-25	: $3,000 benefit (Non-State contribution $1,000)
HERS Index Rating 24-11	: $4,000 benefit (Non-State contribution $1,000)
HERS Index Rating 10 and below	: $8,000 benefit (Non-State contribution .60% of non-state contribution not to exceed $4,000)

Mortgage Incentive Example

Quick highlight review:

- Any FHA lender can offer the EEM
- No second appraisal is needed
- Contractors and bids DO NOT have to be in place prior to closing

Easy Calculation to know the maximum amount:

- Using rule of thumb for a $120,000.00 home value. (Not mortgage amount)
  - The Value x 5%, $6,000.00
  - Selected improvements estimated at 35 HERS point reduction = $3,000
  - $9,000 that the home owner can spend on a deep retrofit.

Steps Involved for Mortgage Incentive

Step 1: Buyer finds new or existing home (even current home owners) and the home owner lets the lender know they are interested in the program.

Step 2: The builder or home owner orders HERS Index Report and goes over the report with the builder or rater to select improvements.

Step 3: The lender reserve the incentive amount based on the estimated savings

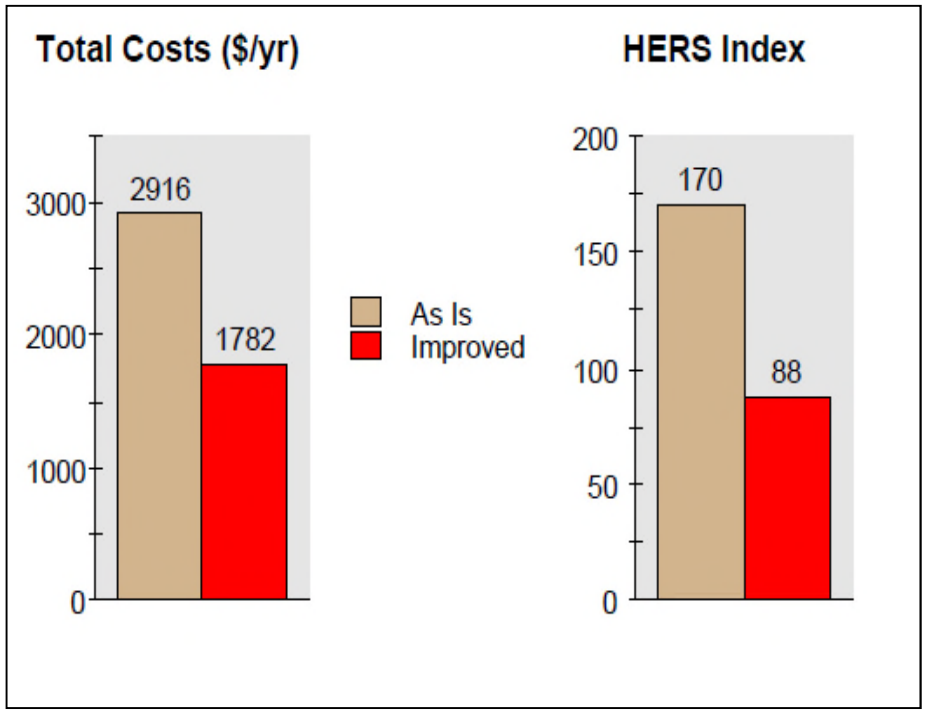
Step 4: Builder or home owner provides lenders HERS Index Report prior to closing.

Step 5: Lender invoices CEO for state portion of the incentive at closing and for existing homes the borrower must sign the home owner agreement at closing

HUD-1 Example

203.	Existing loan(s) taken subject to	
204.	EARNEST MONEY DEPOSIT HELD BY SELLER	5,307.00
205.	UPGRADE DEPOSITS HELD BY SELLER	3,511.00
206.	SELLER PAID CLOSING COSTS (INCLUDES $2343.90 ENERGY INCENTIVE)	3,000.00
207.	COLORADO ENERGY INCENTIVE (STATE PORTION) .	5,656.10

Existing Home Example



- Selected measures would cost $11,000 to install and save the homeowner $1,100 per year.
- $5,000 incentive from CEO (62 point from from 150)
- $1,000 in additional Utility Rebates.
- Home owner has to add $5,000.00 to the mortgage
- $26.84 per month or $322.08 per year

Using the Existing Home Incentive

Traditional Calculation

Mortgage (lifetime of loan): **$156,000**
Energy Costs (annually): **$2,916**

Broken Down Monthly

Mortgage (Principal & Interest): **$837.44**
Monthly Energy Costs: **$243**

Total: $1,080.44 per month

Energy Saving Mortgage Calculation

Base Loan Amount: **$156,000**
+ Improvement Costs: **+$11,000**
- CEO Credit: **-$5,000**
- Utility Rebates: **-$1,000**

New Loan Amount: **$161,000**
Energy Costs (annually): **$1,782**

Broken Down Monthly

Mortgage (Principal & Interest): **$864.28**
Monthly Energy Costs: **$148**

Total $1,012.44 per month

**An example from a home in Larimer County. **Mortgage Loan Interest Rate at 5%*

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Contacting Presenters

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Environmental Protection Agency

Tammy Pritchard – tamara.r.pritchard@hud.gov

Department of Housing and Urban Development